

Date: ^A Wednesday, 08/04/2009 12:53:30 PM
 User: Chantal Lavoie

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : ROUND BILLET 17-4
Job Number : 47095	
Estimate Number : 10039	
P.O. Number :	Part Number : D6104003
This Issue : 08/04/2009 S.O. No. :	Drawing Number : D6104 REV B
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : MACHINED PARTS	Drawing Revision : B
Previous Run : 45036	Material :
Written By :	Due Date : 22/04/2009 Qty: 5 Um: Each
Checked & Approved By : <u>C209/04/08</u>	
Comment : Est. B: 01.09.04 Revised Step 2 SM	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
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Comment: PURCHASING

Issue P/O: 8533

C209/04/08

a) Description: S.S round billet

b) Ø3.25" x 3.80" long

c) Tolerance on all dimensions are +0.030"/-0.000"

d) Material: 17-4PH Stainless steel (Ams 5643 or Aisi 630)

e) One blank makes 2 parts

f) Material certification required

2.0	D6104003P	17-4 SS Roundbar 3.25"OD
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)
 17-4 SS Roundbar 3.25"OD

3.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure material certification is attached

4.0	QC6	DIMENSIONAL CHECK
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Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6104

09/05/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Wednesday, 08/04/2009 12:53:30 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: ROUND BILLET 17-4

Job Number: 47095

Part Number: D6104003

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

09/07/08 (8)

6.0

QC21

FINAL INSPECTION/W/O RELEASE



09/05/11

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF
09-05-10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

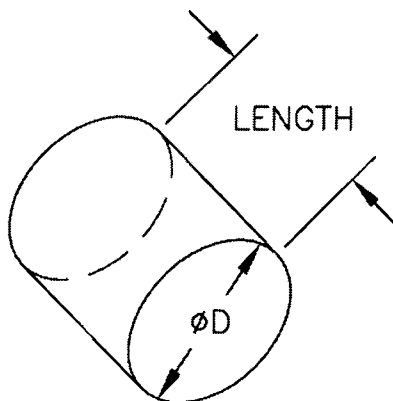
NOTE: Date & initial all entries



DESIGN 27	DRAWN BY 	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED 	APPROVED 	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED
02.11.29

SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

W/D: 47095

CX 09/04/08

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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**Castle Metals®**

A. M. Castle & Co.

BORDEREAU DE MARCHANDISES

Page 1 of 1

No de Formulaire d'Emballage / Pack Slip No:37433

Expédié de / Ship From:		Vendu à / Sold To:		Expédié à / Ship To:		Livré à / Deliver To:	
Castle Metals Montreal 835-Selkirk Avenue Pointe Claire, QUEBEC H9R 3S2		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7			
Date d'expédition / Date Shipped	F.O.B.	Modalités de transport / Freight Terms		Transporteur / Carrier		N° du Bon de connaissance / BOL No	N° de livraison / Delivery No
06-MAY-09	ORIGIN	Prepaid		Manitoulin		36109	2508869

Détails d'expédition / Shipment Details	Destination finale / Final Destination Branch -
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N° de commande / Order No		N° de ligne Line No	N° d'article / Item No		Description		
187775		1	14991.MO		3.2500.RD.17CR-4NI.STAINLESS.CF.SOL TR.COND A.132.0000-156.0000 CUT TO 3.8 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING		
N° de bon de commande / Purchase Order No		Nbre de pièces / Part Number			Qté commandée / Ordered Qty	Qté Facturée / Invoice Qty	Solde à livrer / Backorder Qty
8533 /					5 PCS	5 PCS	
Détails / Details							
Usine / Mill		No de coulee / Heat Number	Code méc / Mech Id	Pièces / PCS	Largeur (Pouce)/ Width (IN)	Longueur (Pouce)/ Length (IN)	Qté expédiée / Shipped Qty (LBS)
		A18695		5			44.67

Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite. These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.							
Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle & Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit. We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.							
Ce matériel a été reçu et inspecté par This material has been received and inspected by:				Date:			



SYRACUSE
NEW YORK 13201

CERTIFICATE OF TEST

S O L D T O	A M CASTLE, INC 3400 N WOLF RD FRANKLIN PARK, IL 60131	S H I P T O	A M CASTLE, INC 3400 N WOLF RD FRANKLIN PARK, IL 60131	OUR ORDER NO P5-16598-6-1
				DATE 03/26/07

CUSTOMER ORDER # & DATE 01-22428	CUSTOMER REQ. #	DISTRICT B PARSONS	SHIPPED FROM SYRACUSE
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DESCRIPTION OF MATERIAL

SIZE

CRU 17CR-4NI CGA IAC 14991
AMC-3174-03 REV 18 ASME-SA564-04ED T630 ASTM-A564-04 T630
AMS-5643Q AMS-2303E AIBI 630 UNS #817400

3.250 RD

mk
09/05/09

HEAT NO.

CHEMICAL ANALYSIS

HEAT NO.	C	MN	P	S	SI	NI	CR	MO	CU	CB	TA
A18695	.040	.38	.024	.023	.51	4.21	15.25	.12	3.26	.29	.012

CASTLE METALS CORP.

DATE RCVD 3/27/07

IAC 14991

APPROVED BY *AW*

QUANTITY

HEAT NO.

MECHANICAL PROPERTIES

1809 # A18695 TENSILE PSI YLD.2%PSI XELONG4D RED/AREA% HARDNESS
BHN 352
CAPABILITY PHYSICALS AFTER 900 DEG. F. - 1 HR. AIRCOOL:
203,390 178,280 11.7 48.9 BHN 415

MACRO TEST OK

FERRITE 3 %

MAGNAFLUX F/S = 0/0

REDUCTION RATIO: 27.5:1

MATERIAL SOLUTION TREATED AT 1900 DEG. F. HELD 45 MINUTES AT TEMPERATURE - AIRCOOLED.

CRUCIBLE MATERIALS CORP. VENDOR #18610.

MATERIAL INGOT CAST.

NAFTA - YES

MATERIAL FREE FROM MERCURY CONTAMINATION AT TIME OF SHIPMENT
NO WELD REPAIR PERFORMED
MATERIAL MELTED IN U.S.A.

THANK YOU FOR SELECTING A QUALITY PRODUCT
MANUFACTURED BY THE EMPLOYEES OF CRUCIBLE SPECIALTY METALS JW

SWORN TO AND SUBSCRIBED BEFORE ME THIS

____ DAY OF _____, 20

NOTARY PUBLIC

JACKIE L. WHITE - SPECIFICATION EXAMINER

CERTIFIED
BY:

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED IN ACCORDANCE WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH THE SPECIFICATION REQUIREMENTS.

CRUCIBLE MATERIALS CORPORATION
ACTING BY AND THROUGH ITS SPECIALTY METALS DIVISION

QUALITY ASSURANCE REPRESENTATIVE